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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/297,701 05/05/99 DEBOUCK

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EXAMINER

SOUAYA, J

ART UNIT

PAPER NUMBER

1655

DATE MAILED:

10/24/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/297,701

Applicant(s)
Debrouck et al

Examiner
Jehanne Souaya

Group Art Unit
1655



☒ Responsive to communication(s) filed on Aug 8, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-12 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-12 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. Currently, claims 1-12 are pending in the instant application. All the amendments and arguments have been thoroughly reviewed but are deemed insufficient to place this application in condition for allowance. Any rejections not reiterated are hereby withdrawn. The following rejections are either newly applied or are reiterated. They constitute the complete set being presently applied to the instant Application. Response to Applicant's arguments follow. This action is FINAL.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Maintained Rejections

Claim Rejections - 35 USC § 103

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bascomb et al (EPO 0 680 722 A1) in view of Lennon et al (Trends in Genetics, October 1991, vol. 7, pp 314-317).

Bascomb teaches methods of screening for detection of herbicides (abstract) involving formation of microbes containing genes essential for plant growth and screening for compounds that inhibit plant enzymes (page 4, lines 4-5). Additionally, Bascomb teaches that once a

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herbicidal compound is identified, plant populations may be mutagenized and grown in the presence of the herbicide at a concentration known to be sufficient to inhibit growth of the wild type and then plants that are able to grow can be selected (page 4, lines 13-17, and lines 36-43). Bascomb teaches compositions of herbicides (page 18, lines 1-30) and isolated genes and proteins known to be essential to the growth of plants (page 2, lines 43, page 18, line 51-58).

Although Bascomb does not teach the use of a grid immobilized library to perform the screening of mutants, Lennon et al teach method of screening libraries involving generating a plurality of filters that form a grid, each grid containing at a predefined region, immobilized cDNA clones (page 314, col. 2, first para, page 315, col. 1 last para, and col. 2). Lennon also teaches the use of a "genomic" cDNA library (p. 314, col. 2, last para). Lennon teaches screening the filters with a labeled hybridization probe to, for example, identify cDNAs (equivalent to mRNAs) that are differentially expressed between tissues and/or developmental stages or directly comparing two sets of conditions (Table 1, page 316, col. 2, first full para). Lennon teaches that the use of arrayed libraries can be used to eliminate the need for multiple rounds of clone purification, thereby improving screening methods (p 315, col. 2, last para).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have used the hybridization based screening method of Lennon to have screened for mutations in a population grown under defined conditions (eg. Concentration of herbicide) as taught by Bascomb to have obtained the invention as a whole. One of ordinary skill in the art at the time of the invention would have been motivated to have used the methods of

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Lennon for screening to have screened for herbicide resistance as taught by Bascom because Lennon teaches that the use of arrayed libraries can be used to eliminate the need for multiple rounds of clone purification, thereby improving screening methods. The ordinary artisan would have been motivated to screen for potential herbicides because Bascomb teaches such a method would be advantageous in herbicide development. Thus addition of the method of screening of Lennon to perform the method of Bascomb would have made the screening method of Bascomb easier to perform.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al (JBC, March 1994, vol. 269, pp 6320-6324) in view of Lennon et al (Trends in Genetics, October 1991, vol. 7, pp 314-317).

Nishi et al teaches an agent (LMB) that induces arrest of the eukaryotic cell cycle (abstract, first para of p. 6320). Nishi teaches screening genomic library of LMB-resistant mutants to identify the target gene of LMB (abstract, p. 6320, last para). Nishi teaches comparison of allelic mutation and wild-type (p. 6322, col. 2, first full para). Nishi teaches the gene and protein sequence of the LMB resistant gene (p. 6322, Table II). Nishi teaches compositions of the agent LMB (figure 1).

Although Nishi does not teach the use of arid immobilized library to perform the screening of mutants, Lennon et al teach method of screening libraries involving generating a plurality of filters that form a grid, each grid containing at a predefined region, immobilized cDNA clones

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(page 314, col. 2, first para, page 315, col. 1 last para, and col. 2). Lennon also teaches the use of a “genomic” cDNA library (p. 314, col. 2, last para). Lennon teaches screening the filters with a labeled hybridization probe to, for example, identify cDNAs (equivalent to mRNAs) that are differentially expressed between tissues and/or developmental stages or directly comparing two sets of conditions (Table 1, page 316, col. 2, first full para). Lennon teaches that the use of arrayed libraries can be used to eliminate the need for multiple rounds of clone purification, thereby improving screening methods (p 315, col. 2, last para).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have used the hybridization based screening method of Lennon to have screened for LMB mutations in a population grown under defined as taught by Nishi to have obtained the invention as a whole. One of ordinary skill in the art at the time of the invention would have been motivated to have used the methods of Lennon for screening to have screened for LMB target genes as taught by Nishi because Lennon teaches that the use of arrayed libraries can be used to eliminate the need for multiple rounds of clone purification, thereby improving screening methods. Thus addition of the method of screening of Lennon to perform the method of Bascomb would have made the screening method of Bascomb easier to perform.

Response to Arguments

5. Applicants traverse that nowhere does Bascomb in view of Lennon or Nishi in view of Lennon either singly or in combination teach or suggest the method of applicant's invention.

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Applicants traverse that the invention is used to identify "any essential gene in the genome of the given organism, and that Bascomb's method is limited to plant genes that have microbial homologs. This argument has been thoroughly reviewed but was found unpersuasive because the method of Bascomb in view of Lennon is well within the broad scope of "identifying [any] genes" as stated in the preamble of applicant's method.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. the invention comprises a) a mutagenized organism by transfection with either a randomly integrating transposon or similar insertional or transposable element of known sequence such as TN, IS, Ty, * element, or phage Mu, or with constructed suicide vector; b) preparation of labeled DNA probes from isolated genomic DNA, from the test cultures is used as templates in primer extension reactions using oligonucleotide primers directed against said insertional or said transposable elements; c) the hybridization of DNA probes with genomic grids to identify mutated genes containing the said insertional or transposable elements) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. *In re Van Guens*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore the argument that Nishi teaches away from a, b, and c above is non persuasive because the claims are not drawn to these limitations.

6. No claims are allowable.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Jehanne Souaya whose telephone number is (703)308-6565. The examiner can normally be reached Monday-Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-3014.

Any inquiry of a general nature should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Jehanne Souaya

Jehanne Souaya
Patent examiner

~~March~~

October 18, 2000

W. Gary Jones

W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600

10/23/00